

ERSA 2004 CONGRESS

44th European Congress of European Regional Science Association

Universities and economically depressed regions: how strong is the influence of the University of Évora on the human capital of the region?

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Abstract:

Universities are a source of significant multiplier effects upon local and regional economic activity. In the case of economically depressed regions, the importance of universities is enhanced. This is the case with the University of Évora, located in the Alentejo (Portugal), one of the poorest EU regions, where it has been a key element in the dynamics of local economic activity.

Apart from having a direct impact upon the economic activity of the Alentejo, the University of Évora has also been responsible for demographic effects, both by encouraging new permanent residents to the area, and also by attracting a fluctuating mass of students, who usually become residents during the period of time required to obtain their degrees.

In this paper, a population of former University of Évora students is analysed with the objective of answering questions related to their connections with the city of Évora and its surrounding areas, after graduation, and also of analysing their impact upon regional economic activity and their contribution to the improvement of the regional labour force. The University of Évora is also assessed from the perspective of its relationships with other regional agents, in terms of knowledge and innovation transference.

It is concluded that one of the main contributions of the University of Évora to regional economic activity occurs via the employment of its graduates in local and regional schools, enterprises and other institutions.

Keywords: Human Capital, Regional Development, Universities

JEL code: O15, O18, R12

1. Introduction

In the last 30 years, the expansion of higher education has been one of the most important happenings in Portugal in social terms. This expansion has come about, basically, in three ways: the creation of new public universities, the creation of public polytechnic institutions, and the development of private universities. This evolution has changed, in a substantial way, the panorama of higher education in Portugal: this subsystem, initially elitist, has become an education of the masses; the number of pupils, teachers and educational establishments has increased exponentially; these establishments, originally located only in the great cities of the Portuguese coast (Lisbon, Coimbra and Porto), started to be part of the cities of the interior, modifying them deeply and allowing access to this degree of education on the part of innumerable students who, otherwise, would not have had the economic conditions to frequent it.

The alterations that have occurred in the domain of higher education have influenced the functions that these institutions will have to perform. The universities currently fulfil three primary functions (GEOIDEIA, 1993):

- i) the development of highly qualified human resources: the university trains graduates, masters and doctors generally required in the work market, the educational system and the scientific and technological system;
- ii) the accomplishment of activities of R&D: the goal of the university is to generate new knowledge and sustain the chain of knowledge; the product of university research, scientific and technological knowledge, is transferred to the exterior through a multiplicity of forms: published books, monographs, articles, reports and other documents;
- iii) the synergic relationship with the surrounding society: through the use of the scientific and technological potential of the university by the exterior, from the accomplishment of research projects in cooperation or contracted by industry to the provision of services and consultancies.

The University has centred the discussion of the relationship between economic activity and the university on this third function, originating in the need to maximize the use of financial and human resources, knowledge and scientific and technical information, through the implementation of efficient mechanisms of transference between the university and the productive sector. This transference implies, however, the existence, in the industry, of human resources capable of absorbing the products of the university, as well the capacity for formulating questions and presenting problems at university level.

In Évora, like the other small cities of the interior where higher educational institutions have been located, since the establishment of the University in 1979, deep alterations have been made in the profile and the daily rhythms of the life of the city. Let us see, briefly, the characteristics that dominated the city until the 1970's.

"The city of Évora was historically affirmed as a pole of administrative functions (district headquarters) and as the main agglomeration of a vast agricultural area marked by great properties (large estates) and by a strong economy centred on three products: wheat, cork-oak and pigs. The natural capital of the Alentejo, a region traditionally considered as the granary of Portugal, its history is dominated, up to 1974, by two social groups – landowners, and employees of public administration - both particularly averse to innovation" (Ferrão, 1997:33).

From the 1980's, through social and political factors, at the national and the local level, the expansion of the University of Évora has contributed decisively to the alteration of the dynamic of the city through the increasingly significant presence of students coming from the exterior. Currently, the University of Évora is one of the main public institutions in the city. Beyond the importance that it has in terms of the direct creation of jobs, with its about a thousand employees, and while an integral entity within local economic activity, with an annual global budget in the order of forty million euros, we must recognise the dynamics generated by its students. During the 1990's, the importance of the university students in the city of Évora was strongly increasing: the 4229 pupils who at the beginning of the 1990's represented 7.9% of the resident population in the city, became 7859 students registered in the academic year 1999/00, and already they represent 13.9% of the residents of Évora. This expansion, of course, has made the relationship between the city and the University more intense

The institutions of higher education in general, and the universities in particular, are promotional agents for the development of the regions where they are inserted. The universities are fundamental entities within the development process, capable of generating positive externalities in improving the performance of human capital through the exercise of the functions of education, R&D and community service.

"The human capital is a fundamental variable in the economic development process: the education of the citizens, more than any material wealth, is the force that mobilizes the cultural irradiation of a country, gives it influence between nations and attributes to it the aptitude to cooperate in the development of a world that is becoming, with each day that passes, closer and more interdependent" (Crespo, 1993).

It is in this sense that we approach the relations between education and economic development: on the one hand, education is responsible for increases in private incomes by enhancing the capacity for obtaining jobs and wages; on the other hand, it generates collective externalities and it stimulates the competitiveness of companies and territories. The relationship between the economic and social actors and the universities, privileged entities in terms of the scope of production and diffusion of innovative knowledge and technology, is developed under the theoretical framework of a learning region: in the context where the actors within the system are involved in processes of learning, they provide an opportunity for the development of knowledge, of know-how and of the abilities necessary for innovation and for the maintenance of conditions of sustainable development.

In this paper, we propose to analyse the contribution of the University of Évora to the improvement of the human capital of the region, through the graduates who remain in the region and through the relationship between the University and the other regional agents. For this, we present some theoretical developments that show how universities can relate to the surrounding region and contribute to the improvement of its competitive capacity and its economic performance. At the same time, it characterizes, in a brief form, the region of the Alentejo, where the University of Évora is inserted, and the institution itself, to provide a better understanding of the effect of its existence and functioning.

2. The university and the region: theoretical framework

The economic development of countries and regions can be defined as the increase, supported and irreversible, of the real income of its inhabitants (Polèse, 1998). This concept assumes there is justice, harmony, and balance, from two perspectives: space and time. A society is not developed whose forms of life are supported by the

exploitation of the resources of others, just as it cannot be one whose standards of living had been created or maintained at the cost of the consumption of resources that are not renewed or of the consumption of renewed resources, but consumed at a rhythm higher than their capacity for renewal (Simões Lopes, 1984).

Regional development is, basically, the construction of a propitious way to innovation, and the sharing of it with local agents. Thus, regional policies will not only have to be centred on the company, but must also privilege the territorial system of production as well as the endogenous mechanisms for creating synergies and relationships between the actors, with the aim of stimulating the capacities for innovation and adaptation through nominated innovative regional agglomerations (Cooke, 1998: 10). These are constituted by large and small companies in the a productive sector, where the relations exist or can commercially be stimulated, activities of research and institutions of higher education, private laboratories of R&D, agencies of technology transfer, associations, governmental organizations and entities for professional training.

Some studies by the OECD (1997, 1998) demonstrate that the development of countries is directly related to their level of education and R&D: more developed countries are, generally, the ones that have a raised level of instruction or the ones that spend relatively more on education and R&D and, as a correlative, all the insufficiency in these areas constitutes an obstacle to development.

Education is a legacy of one generation for the following one, placing its main social function here (Thomas, 1995). It is a medium-term investment, made for the society in general and for families, to the extent that expectations of stronger contributions in the future mean forgoing the productive contribution of the young in the present (Lopes, 2001). Parents want their children to receive an education of high quality because they understand that thus they are preparing them better to face the labour market. At the same time, it is because unemployment rates are higher among unqualified workers, and those of lower educational levels. However, we do not always observe a positive correlation between vocational/professional qualifications and wages, to the extent that, at times, workers with similar ages, qualifications and labour activities can be remunerated differently.

The systematic application of scientific knowledge to the production of goods and services increases the value of education, if it takes into account the component of technical or professional training, to the extent that the knowledge is internalised by scientists, teachers, technician, managers and others. Qualified human resources will have a more significant role in the development of society, insofar as they become more dependent on knowledge. Innovation, and new products and processes will come to have a bigger importance in companies. Research and knowledge will tend to increase, and companies will have to strengthen their labour force with researchers, engineers and other technically specialized staff (Shelton, 1997:16).

The accumulation of capital, physical and human, is a basic factor for the existence of sustainable economic growth in the long run, and for the reduction of the divergences of income between countries. Improvement in the level of life of the populations is directly related to productivity. Economic success, the first condition for the improvement of the level of life of the population, translates into the capacity of regions or organizations to mobilize different institutions (companies, organizations, infrastructures of information, systems of incentives, etc.) to support learning. The relation between the acquisition of knowledge and institutional education is decisive. The training of abilities results (Lundvall, 2000) from the institutional training acquired from diverse educational establishments (schools and universities) and, also, through the learning that occurs through the pursuit of professional activity.

In fact, the component of research in higher education institutions (HEI) can assume a global source, without paying attention to regional brands. Goddard (1998) asserts that it is from the level of education and the employment of graduates in the regional labour market, as well as the level of the programs of professional improvement, that the effects of these institutions will be more significant, that effect being clear in relation to the local economies where they are inserted, in that it is positive and increases with time (Hedrick, Henson and Mack, 1990:17-18).

There are several ways in which the HEI can influence the functioning of the local labour markets (Beeson and Montgomery, 1993). On the one hand, through the performance of the role of educators, the HEI increases job prospects and the chances of earning higher wages for graduates of the HEI; on the other hand, by increasing the average level of knowledge of the human capital, the HEI can, as said previously, promote an increase in the growth of local productivity, and in the capacity to develop and to implement new technologies, depending on the average level of human capital of the economy. We restate the argument: the knowledge of the active population influences the technology used by companies, as well as by workers, to the extent that people with raised levels of instruction are more able to implement new technologies.

One of the questions of the economic success of a region is in respect of the extent it can attract or retain graduates, in that these citizens generally become more productive. A great part of the economic effect of the HEI depends on the decisions of its graduated not to migrate (Brown and Heaney, 1997). In relation to leaving, we can admit that higher education increases the probability of migration, insofar as graduates are more apt to compete in the national and international labour markets and thus leave the region where they have studied. Migration decisions are based, basically, on job chances: if a given region does not have a tradition of growth of jobs in determined activity sectors, but has graduates in these areas, then these will be potential emigrants. At the same time, the increase in the knowledge of the HEI can not influence the development of economies if adequate and available jobs for graduates do not exist.

The retention of graduates is one of the main mechanisms that the region can adopt to conserve elements endowed with a sensitivity to innovation, to the enterprise spirit and to management capacity. Retention rates show, however, a relationship of many factors: the capacity of the HEI to offer studies and training that take into account the needs of the regional economy, solidity, the diversity and the importance of the economic regional base, the context of the national economy, the origin of the students, the type of educational establishment and the economic and social context of the students.

However, the contribution to the relationship between the universities and the companies must be greater than the availability of training, and should include, for example, the constitution of trusts for R&D or the acquisition of consultancy services from the universities. In a scenario where the universities do not make more use of the monopoly of the production of scientific knowledge, to remain in the vanguard of knowledge, university researchers will have to exchange knowledge with others, including producers of knowledge such as companies or other organizations (Schuetze, 2000: 189). From the establishment of diverse relations between universities and companies, both institutions gain (Antonelli, 2001: 26-27). In the universities, the teachers and researchers are presented with specific technological problems, which has a positive effect on the research undertaken. The companies, in their turn, have access, at reduced cost, to a body of ability in relation to advanced

techniques and to a specialized infrastructure, that is often characterized by a great indivisibility and strong fixed costs.

The relations between pure and applied research, and the consequent diffusion of knowledge jointly through partnerships between the units producing new scientific knowledge and local companies and institutions, is able to provide form and training in relation to research contracts, consultancies, science parks, joint creation of companies of R&D, commercialisation of research through businesses, or others.

The effect of the research done in the HEI, or other units, is particularly important for SME's- the predominant companies in the Alentejo, as well as in the majority of the regions of the interior of Portugal – insofar as the companies are those which most need to look to the exterior for technological developments capable of promoting improvements in the efficiency of their productive processes. Large companies, in their turn, if they do not have R&D units installed, look for these processes near to their headquarters, or in companies of the same group, or in companies where such exists, through acquisition mechanisms, through co-operation or by other means.

In the most peripheral regions (Rosa Pires, Rodrigues, e Castro, 1998: 3), the concept of the triple helix, a metaphor illustrative of the relations between higher education, the productive system and the government, has come to be considered as an essential factor in stimulating and/or strengthening development strategies. The main argument developed presents the idea that the installation of innovative dynamics in a regional economy depends on the capacity of the region to synthesize three pairs of attributes:

- i) Coherence and diversity of the regional productive system;
- ii) Competition and cooperation;
- iii) Access to tacit and codified economic knowledge.

With the attributes indicated, the universities can contribute to improving and to consolidating the regional capacity for innovation, through mechanisms in the area of education and research. The coherence of the regional system will become more robust through a rigorous selection of courses and curricula adapted to regional technological needs, and by supporting the development of a culture using local techniques (accumulation of codified knowledge). At the same time, the processes of creation, acquisition, adaptation and diffusion of new knowledge developed in the universities, can consolidate the relationship capacity of the region where they are inserted, developing projects that involve the sharing of co-operation between companies. This can contribute to diminishing the distance between science, technology and the society, between pure and applied research and between the discovery of new technologies and the development of products and viable processes of production (facilitating the accumulation of tacit knowledge).

3. Some features of the Alentejo and the University of Évora

3.1 The Alentejo¹

The Alentejo, with its 535,000 inhabitants (5% of the total population of Portugal), occupying one third of the country, is the least densely populated Portuguese region. The increasingly aged population basically lives in urban agglomerations of small to medium size, while the agricultural areas are in the process of population desertification. Évora, with its 56,525 inhabitants, is the biggest city of the region.

¹ Some data of regional characterization can be seen in Table 1 in Annex.

The active population is also tiny, not exceeding about 220,000 individuals. Until the 1990's, the Alentejo was a predominantly agricultural region, with this activity employing the majority of the active population. Since then, the tertiary sector has become the main employer. In characterizing the employed population, two main aspects stand out: on the one hand, the large amount of unqualified labour, on the other, the importance of directors, controllers and specialists. This second characteristic is related to the importance that public administration has in the regional job market, the educational qualifications of employees in Alentejan companies being weak, with few of the workers having middle- and upper-level qualifications. The low average level of qualifications of the employed population results from the low levels of education of the resident population in the region: in 2001, 35.8% had, as a qualification, only the 1st cycle of basic education. Only 7.6% of the residents have higher level training.

In 1999, the rate of unemployment in the Alentejo was 6,7% (in Portugal it was 4.4%), which reflects the evolution of the agricultural sector, resulting from the transformation that this activity has suffered due to the implementation of the reform of the agricultural policies by the EU. Beyond this particularity, unemployment in the Alentejo presents similar characteristics to that of the rest of the country: it affects all women more than 25 years old and looking for a new job. These characteristics allow us to classify the unemployment as structural.

Because the active population of the Alentejo, employed or unemployed, is under-qualified, this implies consequences at 3 levels:

- i) it affects the installation of new economic companies, particularly those most demanding in terms of training;
- ii) it limits the capacity to promote self-employment;
- iii) it influences the competitive capacity of local companies.

The industry of the Alentejo constitutes only a small part (3,4%) of the Portuguese total. These companies are small to medium size, in terms of staff employed (6,2 people) and in terms of sales (about €450,000). The companies of the Alentejo, of small size and with fragile capital structures, basically target the local and regional market. The insertion of the economy of the Alentejo in international markets has been deficient, even though some regional products and resources are gaining an increasing position in foreign countries. On the other hand, some significant investment has been made in modern industries with appreciable technological intensity, associated with external capital.

The low level of economic activity results in a lower quality of life for the residents of the region. In terms of the income of the region and its residents, the available data for GDP per capita discloses that the Alentejo is one of the 25 poorest regions of the EU, and is the one most removed from the average for the country. Also, disposable family income presents values lower than the rest of the country (Portugal) while prices for the consumer are, on average, higher. The regional purchasing power is only 68% of the national, this being the worst result presented by all the regions of the country. Another index, the Composed Indices of Human Development, is only 76.

The quality of life of the population of the Alentejo can also be evaluated through the infrastructures it has. If, on the one hand, the region is reasonably well provided for in the domain of basic infrastructures and presents a very significant level of environmental and cultural preservation, the same is not true as far as social provision is concerned, pointedly in the domains of health and support to the third age, which assumes particular importance in an aged region such as the Alentejo. Data show its

location coincides with the main urban agglomerations, creating problems of access to this provision, in that it is the aged who inhabit the agricultural areas more.

In the domain of communication infrastructures, it is true that the region is reasonably well endowed, with a road network that fulfils, in a satisfactory way, the goal of guaranteeing good accessibility to the bordering regions (Lisbon, Spain and the Algarve) but discloses a lack in respect of intra-regional accessibility, with links between the agricultural areas and the headquarters of the region being slow. The railroad network is obsolete, and none of it fulfils its function of transporting passengers and merchandise. The port infrastructures serve only for the transportation of determined merchandises, and the airports are still to be developed. This scenario makes the region dependent on road links for the transport of merchandise and people, both in the interior of the territory, and in links with the exterior, which is not economically the most efficient solution from the point of view of residents and companies.

The Alentejo, from the point of view of provision and support infrastructures for the population and for economic activity, offers a picture with reasonable pointers for the future, but it continues to present strong weaknesses in that touching its basic resource, the population, insofar as this continues to show signs of ageing and of low qualifications. In this context, it can not be expected that its economic dynamics will change in a significant way through the activities promoted by regional economic agents, which makes the region dependent on external initiatives for the promotion of its development.

3.2 The University of Évora

Since its reopening at the end of the 1970's, the University of Évora (U.E.) has come to gain dimension and stature in the context of Portuguese higher education, where it currently occupies a medium position, gaining successively more students and teachers. However, the U.E., with about eight thousand students and more than six hundreds teachers and researchers, is the main higher education institution, and the only public university in the region: in the year 2000, it had 39,9% of the students in public higher education in the Alentejo, and 55% of the teachers².

The U.E. is installed in 9 buildings in the historical centre of Évora³ and its environs, where the teaching and all the other services function. This location provides it with an excellent historical and patrimonial setting, contributing to the concept of a "university city". The effect is strengthened by the fact that the students who are not resident in Évora choose the centre of the city to reside in at the time when lessons are held, contributing for the occupation of the buildings as well as to the incomes of the families who receive them.

Most of the students on undergraduate courses (95%) are women, not resident in the region of Évora, who have been placed on courses different from the ones desired, and for whom this university was not the first choice. The location factor is pointed to as one that most influences the choice of the U.E. In fact, just 30% of the students of the U.E. come from the Évora region. The courses of the U.E. that traditionally have more students are those of education (25%), economy and management (14,3%) and agricultural engineering (15,7%). The number of pupils on courses of advanced training, still small, has seen a positive evolution, in recent years. These data suggest

² In the Alentejo, there exist 2 public polytechnic institutions and 3 institutions of private higher education.

³ The city of Évora was classified as a World Heritage Site, by UNESCO, in 1986.

that, with the current scene of a falling number of people seeking undergraduate places in HEI, and the excess of offers existing in public institutions, the U.E. must carefully evaluate its education policies, particularly in terms of the diversity of the offer for undergraduates, and of seeking to attract a new public, for example, post-secondary education or other fields of education and training that do not have as their purpose the attribution of an academic degree.

This institution has in its service about a thousand employees, the majority of them teachers. The functioning of the school is assured by an annual budget of around 40 million euros, proceeding mainly from the Government, and compromising to a large extent (about 80% of the Academic Budget) the payment of wages, which limits the capacity for investment and improvement in the conditions of study and work of the members of the U.E. The annual budget of the University, together with personal expenditure of students over the year, has a multiplying effect on gross domestic product and disposable local income with a value of 1,2. At the same time, we conclude that the activity involving the U.E. is equivalent to 1.5% of the GDP of the Alentejo.

Being the main institution of research and development located in the Alentejo, the U.E. has increased responsibilities in the areas of the research and community service. With reference to research, the areas prioritised for development are Natural Sciences, Social and Human Sciences, and Agrarian and Veterinarians Sciences, which reflects the fact that these are the areas with more teachers with PhD's. The research is financed, basically, by European programs like PRAXIS and PAMAF, and is developed, predominantly, in studies led by the institution itself, with few cases of partnerships with foreign entities.

In the scope of the activities of community service, the U.E. offers services at the level of training and consultancy, or by promoting the insertion of graduates in the regional labour market. It participates in many regional entities, at the level of the respective administrations, seeks regional partners for the institution through participation in activities of education or research, and maintains a special relationship with the schools involved in other levels of education. The accomplishment or promotion of cultural and similar activities has been one of the most systematic ways used for involving the city. In terms of international cooperation, we cannot consider that UE has been very active; neither the students nor the teachers have used, in a significant way, the many European mobility programs.

In terms of the strategy for development over the next few years, this institution will have to seek to consolidate its position in the framework of Portuguese higher education institutions, adapting its activities in accordance with the process begun by the Bologna Declaration, and diversifying them with the aim of attracting a new public, strengthening its activities in the area of research and the disclosing of its results, developing co-operation and internationalisation, having the underlying idea that while the University is a scientific institution, it is also a school, and a cultural agent for the development of the territory where it is located.

4. Effects of the University of Évora in the region

4.1 Methodology

The analysis of the effect of the U.E. in the improvement of the human capital of the region and the transference of innovative knowledge and technology to other economic

agents was made using 2 instruments of information gathering: questionnaires and the analysis of the content of protocols.

The questionnaires were applied to many public targets: local and regional companies, other institutions, graduates and teachers of the U.E. These questionnaires allowed us to evaluate the relationship with a diversified set of regional and local agents, including employers and employees, teachers and graduates, and effective or potential partners in the activities of education, research and community service.

The protocols signed by the U.E. with external entities were studied with the aim of identifying the links between this institution and the region, through the main characteristics of the content of signed documents. These documents are the written expression of the involvement that exists between the U.E., through its teachers, researchers and infrastructure, and the surrounding economic and social organisations.

To analyse the collected information, we proceeded to a descriptive analysis of the data acquired by these instruments, with a view to making evident its basic characteristics through the evaluation of the frequencies of the answers, as well as measuring the average value and the standard deviation, when such was relevant. At the same time, an analysis was made of the relationship between the variables to complement the treatment of the collected data. The techniques of descriptive statistics were complemented by techniques of content analysis, particularly in the treatment of some of the questions on the questionnaires, and in the treatment of the protocols. In the content analysis, the technique of categorial analysis⁴ was used.

4.2 Contribution to the human capital of the region

The contribution of the U.E. to the improvement in regional human capital is particularly important in a region such as the Alentejo where the qualifications of the population are very weak.

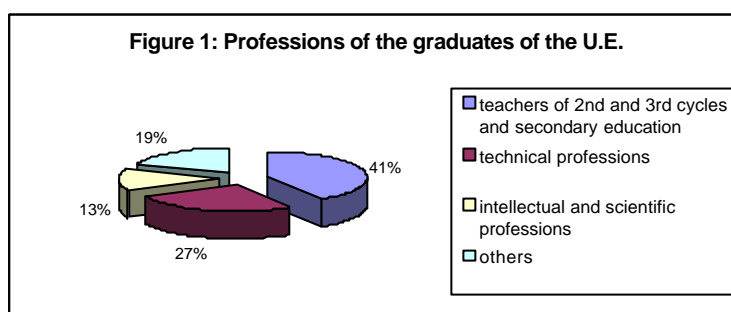
The first contribution, which the U.E. makes to the qualifications of the human capital of Évora, results from the direct creation of jobs. Of its one thousand employees, the majority are teachers. Of the remaining employees, 15% are graduates and 26% have technical training. We are, therefore, in an institution where the degree of qualification for jobs is very high. At the same time, as a result of its economic activity, the U.E. produces a multiplying effect on jobs, creating more than two thousand indirect jobs, mainly (60%) in sector III.

Beyond the effect on jobs described above, we will also seek to evaluate whether the graduates of this institution, after finishing their training, remain in the region, inserted in the local and regional labour market. From the results of questionnaire carried out in a diverse set of institutions, we conclude that, among the employees with a university education, 27.8% were graduates of U.E. This value, apparently low, is explained by the age of the institution, which is no more than 20 years old, and by the fact that a large number of its graduates are not from the region.

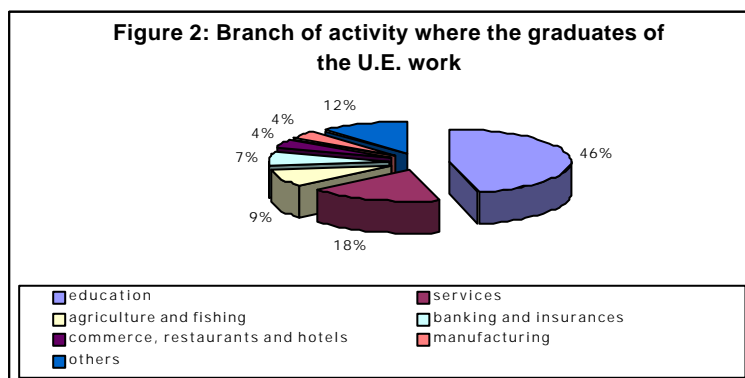
⁴ The technique of categorial analysis "consists of calculating and comparing the frequencies of certain characteristics, previously grouped in significant categories" (Quivy, 1992: 226).

In the questionnaire applied to the graduates of U.E.⁵, one of the pieces of information that we looked for was aimed at evaluating at what point the students, some time after graduating, sought and obtained a job in Évora or the Alentejo. In this domain we can conclude that 39.1% of the graduates looked for a job in Évora and that 37.4% tried to find employment in the Alentejo. Of these, 20.2% decided to take a job in Évora and 30.4% in the Alentejo.

Of the graduates that work in Évora, teachers of higher education, teachers of the 2nd and 3rd cycles and secondary education as well as those in administrative and supervisory jobs have a very similar weighting (about 14%) in this subgroup of respondents. Among those working in the Alentejo, almost half (48,9%) are teachers of the 2nd and 3rd cycles and secondary education (Figure 1).



The main employer of the graduates of the U.E. is the Education Ministry, also very significant being the number involved in technical jobs. As well as education, agriculture and fishing, financial activities and commerce, hotels and restaurants are the other sectors of activity using many of the graduates of the U.E. (Figure 2).



The relationship between the U.E. and the biggest companies of the Alentejo⁶ is basically the insertion of trainees or students into work, as well as providing a level of graduate staff for the company. However, diversity can be seen in the appreciation of these issues: on the one hand, the companies consider that, in the case of the insertion of trainees, the partnership conforms in a reasonable way to their expectations, while in the case of the rank of graduates in the staff of the company, the degree of satisfaction does not reflect expectations. Those questioned expressed

⁵ A postal questionnaire to graduates of U.E. for whom the academic services of the institution knew the address. This questionnaire was answered by 26% of those questioned (more than 750 answers), representing the graduations offered by the U.E. The majority of those questioned graduated in the 2nd half of the 1990's.

⁶ We inquired the companies with headquarters in the Alentejo and more than 50 workers.

themselves very satisfied with the partnerships related to the insertion of graduates in the companies, with the support of specific programs for that effect.

The insertion of graduates into regional economic activity is one of the ways that can assure contact between higher education and the region. The companies that answered the questionnaire had, on average, 146 employees, of which 8 were graduates of a higher educational institution (about 5,5% of the total), which reveals the weak participation of graduates in the total of workers in this segment of companies. A large number of the companies (71,9%) had graduates in their service, mainly those (62,8%) who had been trained in the University of Évora, in the Polytechnics of Beja and of Portalegre and in the Technical University of Lisbon. The scientific areas providing most of these graduates are economy, management, and industrial, civil and agricultural engineering.

The institutions and companies who answered to the questionnaires considered their employees, as having adequate training for the functions they performed. The teachers of the U.E., in their turn, considered that the training offered to undergraduates or postgraduates, allows a satisfactory adjustment to the needs of the regional and national labour markets. This affirms that the performance of the respective U.E. departments contributes to the improvement of the qualifications of the human resources within the local labour market.

The regional institutions, although claiming to know, in a general way and to a reasonable degree, some of the activities developed in the U.E., particularly education, research, community service and training, disclose their greater level of knowledge concerning given education, but they do not have a clear idea of the graduate specializations required to meet the needs of the region or the institutions themselves.

All those questioned are unanimous in considering that the U.E. must give priority to developing education in the scientific area of Computer Science and Computation, research or community service. As well as this, there must be some modifying of position in respect of the importance of studies in the area of Health and Well-being, the place of private ownership in an ageing region such as the Alentejo, and in the current national context of lack of health professionals. Companies, in their turn, relate, in a systematic way, the need for the U.E. to invest in the scientific area of engineering, the area where they recruit many of their technicians. Economics and management, life sciences, geography and the environment, as well as the traditional sectors of agriculture and fishing, are other areas that particularly the teachers of the institution and the other entities affirm to be basic to the development of the region and of the institution itself.

A broader analysis, elaborated through questionnaires used with the graduates from the Alentejo in the academic year 1994/95 (from all institutions of public and private higher education) concluded that those questioned (based on birth and residence during the secondary cycle), after completing their degrees, returned to the place where they lived until their secondary education (Cerdeira, 1999: 251-253). This interregional movement was positive for the Alentejo, which not only retained the students who came from this zone, but also gained some who came here from outside and ended up looking for work in the region, with the district of Évora contributing most to this situation.

This study further concludes that there is still some uncertainty concerning work among those questioned. The tertiary sector was the one that absorbed graduates (81,2%), distributed among schools (49%), health establishments (12%) and public administration (12%) which means that the absorption of qualified and trained human

resources in year 1994/95 was made in order to create conditions of access for the population to 'essential public goods' (education, health, and the remainder to support the machinery of public administration), because that seems to make the State the most active in responding with job creation and, simultaneously, with the creation of better conditions of life for the population.

4.3 Contribution to innovation and technology transfer

The best way to analyse the transference of innovative knowledge and technology to the surrounding region is through the protocols signed by the U.E.

In summary, we can say that the diverse protocols signed between the University of Évora and external entities, the majority in the second half of the 1990's, have translated into a relationship, with a similar intensity, with public and private entities, basically nation-wide. Initially, Rendering of Services Protocols were established together with contract activities in the domains of research and community service. Most of the activities were related to agricultural sciences, the traditional activity in the region, natural sciences and environmental and social sciences.

The region of Lisbon and the Tejo valley is preponderant in relation to signed documents, while the relations with the Alentejo are only intense at the level of the city of Évora. These documents are, basically, bilateral: they involve only one department or departmental area and only one external entity. At the same time, the degree of internationalisation is very weak, as are the relationships with entities or localities situated in the bordering region Alentejo/Extremadura (Spain). The U.E. carries out its research in a somewhat isolated form: it is the leader in 57% of projects where it participates; co-operation with other universities or R&D centres, national or foreign, has little significance.

The documents signed with local and regional entities are mainly in the form of Rendering of Services Protocols (61,3%), basically involving the departmental areas of natural sciences and environmental and social sciences. These contracts also involved, in a significant way, the areas of agricultural sciences, economics and management sciences. The regional entities that signed these documents are diverse: city councils and associations of cities, public institutions of regional scope, regional delegations of some ministries, professional associations of regional scope, particularly in the domain of agriculture, local development associations, companies with headquarters in the region, other educational establishments and cultural entities, among others.

The documents signed with local and regional entities relate, basically, to activities in the area of research, education, training and community service. The participation of the U.E. in these partnerships has taken different forms, among which we highlight the accomplishment of specific training activities, the exercise of activities of consultancy and other provision of services close to the contracting entities, as well as the integration of the social agencies of other institutions.

The research carried out in the U.E., in the year 2000, had financing equivalent to 20% of the global budget of the institution, and took place in the departments and the research centres. Despite this, research and community service stand out as characteristic of the basic fact that the research developed is applied to nation-wide and international questions, reflecting the concerns and the interests of the investigators, such as the possibility of getting financing. Thus, this activity does not reflect the regional context where the institution is located. The Alentejo would have

much to gain if the teachers and researchers of the U.E. applied the scientific method of research to dealing with regional problems. This is teamwork, together with members of the same department or of other national or regional institutions, its results being divulged predominantly at conferences in Portugal or other similar sessions. Community services, in its turn, has responded to the needs presented by regional partners, and has become a team based on members of the same department.

Despite this, the regional institutions evaluate well the contribution of the U.E. to the development of the city and the region, (between 6 and 8 on a scale of 0 to10). If an analysis is made in the area of the performance of the diversity of functions developed (education, research, community services and training), or of impacts on specific areas (economic, demographic, cultural, and technical and scientific), generally the classification is the highest in Évora, in comparison with the Alentejo, which denotes that the perception among most of those questioned is that the impact of the institution is limited to the territory of the city.

However, the respondents evaluate with higher average classifications (between 7 and 9 on a scale of 0 to10) the engagement that the U.E. should have in its diverse areas of activity, which is taken to mean that they consider that the institution can still improve its contribution to the region.

A more detailed evaluation of the sectors where the influence of the U.E. is more significant demonstrates that its main contribution is:

- i) to the improvement of the qualifications of the active population and of the labour market, which strengthens the link between the region and the other institutions in terms of the performance of the function education,
- ii) to the information society and to the definition of a strategy for the region, as well as in the promotion of or contribution to regional artistic and cultural life, due to the existence of frequent activities of this nature: exhibitions, concerts, theatre and cinema, among others, which the members of the U.E. and the public in general can share.

The U.E. is considered by those questioned as a moderately active partner in the relationship, disclosing, however, some difficulties in relation to the lack of existing information concerning the diverse agents, to a lack of motivation, and to a lack of tradition in the establishment of partnerships characteristic of the region. As to promoting the approach between higher education and the region, those questioned are unanimous in the measures proposed: more and better information, and the promotion of the activities developed, in terms of both education or research.

The regional institutions still consider that the U.E. contributes, in a moderate way, to the fixing of new companies or other entities in Évora. This evaluation leads us to conclude that the presence of the U.E. is not seen as having the effect of attracting new economic units to the Alentejo.

5. Final remarks

The U.E. is the only public institution for university education in the Alentejo. Its students are equivalent to 4% of Portuguese students in higher education, 40% of the students in higher educational establishments in the Alentejo, and 14% of the residents in Évora. Thus, despite the small expression that it has in national terms, its regional weight in the area of education is sufficiently important. On the other hand, being the highest educational institution in the region, with more human resources and having the best levels of qualification, it has an increased responsibility in the areas of research

and community service. In this area, some partnerships are registered in the areas of social sciences, agricultural sciences, natural sciences and the environment.

The main relationship between the graduates of the UE and the surrounding region consists of participation in periods of training for the staff both of institutions and of companies, in the city and in the region, in the areas of economics and management, pure sciences and agricultural sciences. In the activities of research and community service, the partnerships with regional and local entities give priority to local authorities, decentralised public institutions, professional associations, local development associations and regional associations.

Although we have exposed many gaps in the relationship between the U.E. and the region, we also conclude that this institution promotes diverse initiatives which regularly deepen its relationship with the region. The departments and research centres have undertaken many initiatives, such as clarification and promulgation sessions, participation in fairs, as well as partnerships with professional associations, companies and establishments of other levels of education.

In terms of the link to the region, we can enumerate several examples: the initiatives in the area of Science Day, one day where the institution opens its doors to the students of the other levels of education; the community services provided by the Water Laboratory or the Veterinarian Hospital; the research developed in areas of regional interest such as irrigated land, forests, cheese or wine.

The performance of the U.E. in the area of the transference of innovative knowledge to regional companies and other institutions is reactive, stemming from isolated contributions and not from a strategically institutional perspective. However, we cannot ignore the fact that the first contract for community services, signed by the U.E. in the 1970's, was in the area of wine, transferring and applying the innovation developed in the laboratories of the institution to regional agricultural exploitation, giving origin to the market success that the wines of the Alentejo now know.

6. References

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ANNEX

TABLE 1: SOME DATA OF REGIONAL CHARACTERIZATION

Variable	Year	Unit	Portugal	Alentejo
Resident population	2001	1000 hab.	10355,824	535,507
Population density	1998	Hab/km ² (%)	112,7	19,8
Activity rate	1999	(%)	50,5	44,7
Population for activity sector	1999	(%)		
Sector I			12,7	12,9
Sector II			35,1	26,2
Sector III			52,2	60,9
Unemployment rate	1999	(%)	4,4	6,7
GDP/per capita	1997	10 ³ esc.	1.797	1.574
Disposable family income	1995	10 ⁹ esc.	11.290	506
Regional purchasing power	1997		100	68
Composed Human Development Index	1997		81,6	76
Literacy Index	1997		91,1	80,5
Life Expectancy Index	1997		84,9	86,2
Comfort Index	1997		94,7	91,5
GDP/per capita Index	1997		55,6	45,8
Educational level	2001	(%)		
illiterate			9,0	17,1
secondary education			16,0	13,9
higher education			10,6	7,6
currently in education			20,6	18,3

Source: INE, IEFP, Department of Statistics of Work, Jobs and Professional Training, PDR 2000-2006.